

REMARKS

Introduction

The above amendments and these remarks are responsive to the Office action mailed on January 9, 2008. Prior to entry of the amendments herein, claims 1-46 were pending in the application, and are rejected in the Office action as obvious over a proposed combination of US6149490 to Hampton with US20060136544 of Atsmon. Additionally, claims 7, 27, and 46 are rejected as being indefinite.

Applicants have studied the Office action and the references cited therein, and respectfully traverse the pending rejections. In this response, claims 1, 3, 7, 12, 14, 20, 21, 23, 27, 29, 32, 34, 39, and 40 are amended either for clarity, to address formal matters, and/or to more particularly recite the subject matter for which Applicants seek protection. Additionally, claims 2-4, 22, and 41-46 are canceled herein without prejudice. Remarks are presented below to demonstrate that the pending claims are allowable over the cited references.

In view of the amendments above, and the remarks below, applicants respectfully request reconsideration of the application under 37 C.F.R. § 1.111 and allowance of the pending claims.

Rejections under 35 USC § 112

Claims 7, 27, and 46 are rejected under 35 USC § 112, second paragraph, as being indefinite. More particularly, the Office action asserts that claims 7 and 27 are unclear because the claims recite "a third frequency range that is more than twice the second frequency range." Applicants believe that this wording is clear, but have amended the claims to incorporate alternate wording used elsewhere in the claims, for example in claims 10, 18, and 30. The rejections of claims 7 and 27 on this basis are therefore believed to be overcome.

The Office action also asserts that claim 46 recites subject matter without sufficient antecedent basis. However, claim 46 is canceled without prejudice, and the rejection is accordingly overcome.

Rejections under 35 USC § 103

As mentioned above, claims 1–46 are rejected under 35 USC §103 as being unpatentable over a proposed combination of Hampton with Atsmon. Hampton discloses an interactive toy that gives responses to various stimuli such as handclaps and infrared signals, and Atsmon discloses computer communications using acoustic signals, including by means of ultrasonic frequencies.

However, Applicants respectfully traverse the rejections for at least the reasons that (1) neither reference, either alone or in combination, discloses the subject matter of the pending claims, and (2) it would not have been obvious to combine the cited references.

Of the pending claims, claims 1, 12, 20, 21, 32, and 40 are independent. The remarks above are arranged to address the rejections of each of the independent claims in order.

Independent Claim 1 and Dependent Claims 5-11

Regarding independent claim 1, the claim is amended herein to incorporate subject matter originally recited in dependent claims 2–4, which are canceled without prejudice herein. Amended claim 1 recites, in part, a sound detector adapted to (1) detect sound in at least two different frequency ranges, one of which is above normal human speech and the other of which includes frequencies of normal human speech, and to (2) reject frequencies in an upper range of normal human speech. Amended claim 1 also recites, in part, an output apparatus adapted to

produce corresponding sensible actions when sound is detected in each of the aforementioned frequency ranges.

The Office action asserts that Hampton discloses a toy with a signal detector that can detect signals in the IR and “microphone range” and prompt actions when signals in these ranges are detected, and asserts that it would be obvious to use a communication link as disclosed in Atsmon to eliminate the IR apparatus. The Office action then asserts that such a modification would be obvious “to reduce costs” (Office action, page 4).

However, the proposed combination does not disclose the subject matter of claim 1, and the Office action fails to make a *prima facie* showing that the proposed combination would have been an obvious one to make.

To first address the subject matter of claim 1, Applicants preliminarily note that the cited references do not actually disclose the subject matter on which the Office action relies.

For example, the Office action asserts that Hampton discloses detecting a frequency range that includes frequencies of normal human speech (Office action, page 4), but this assertion is unsupported. Hampton discloses that the sound signals that the toy can detect are limited to “high frequency audible noises like clapping” (Hampton 20:20–21). Such audible noises are not disclosed to include frequencies of normal human speech. Hampton nowhere discloses that the toy playthings are responsive to, or can even detect, sound signals other than this range, or that this range includes frequencies of human speech.

As another example, the Office action asserts that Atsmon discloses that ultrasonic links may be used instead of IR links (Office action, page 4). This assertion is incorrect. The cited section of the Atsmon reference (paragraph [0003]) merely discloses that both types of technology have been used for signal transmission. However, the Office action conflates IR

frequencies with sound frequencies by implying that the technology used for transmission and/or detection of such frequencies is interchangeable. Neither of the references discloses or even suggests this; the technologies of detecting and/or transmitting signals in various sections of the electromagnetic spectrum are widely diverse and highly specialized, and are classified separately by the U.S. Patent and Trademark Office.

Amended claim 1 recites subject matter originally recited in claim 4. The Office action asserts that:

Regarding claims 4-10, the combination of Hampton and Atsmon teach that two distinct frequency ranges can be used to create two communication channels and that sound signals may be used for both.

(Office action, page 5; the Office action makes similar assertions on page 6 with respect to claims 14-17, and on page 11 with respect to claim 45-46.)

Again, no support is cited for this assertion; the Office action fails to identify where or how the cited references disclose that sound may be detected in multiple sound frequency ranges, much less detect certain frequencies of human speech and reject others, as recited in claim 1. In contrast to the assertion in the Office action, Hampton is restricted to detection of clapping noises and non-sound signals (such as IR); Atsmon only discloses detection of signals in and around different, single sound frequency ranges. Neither reference provides support for the above assertion; as such, even if “two frequency ranges ... used for create two communications [and using] sound signals ... for both” is a correct construction of the subject matter of claim 1, the references, either alone or in combination, fail to recite at least this subject matter.

To illustrate additional subject matter in the rejected claim that is not disclosed in either reference, there is also no indication in either reference that detection of signals in different sound frequency ranges prompts the production of corresponding sensible actions, as recited in claim 1. Rather, the output actions of the Hampton toy figure are determined either by the

activity being played (Hampton 24:56–28:50) or by the *type* of signal being detected (*i.e.* via IR, audible clapping sounds, and so forth), rather than the range of sound frequencies in which a sound is detected. Similarly, the output actions or signals of the Atsmon system are not disclosed to correspond to the sound frequency range in which a sound is detected, as recited in claim 1.

The references also fail to disclose a sound detector adapted to detect sound in a frequency range that includes frequencies of normal human speech and also to reject frequencies in an upper range of normal human speech, as recited in claim 1. The Office action asserts that it would be “obvious to ... use frequency ranges that have some separation between them and to filter out all frequencies in those ranges of interest,” but this is merely a *result* of a proposed modification, rather than an explanation of what the proposed modification might be or how it might be achieved. Regardless, this particular result is quite different from the subject matter recited in claim 1.

With respect to dependent claims 5-11, these claims recite additional subject matter, such as, for example, specific frequency ranges. The Office action is silent with regard to these frequency ranges. However, neither Hampton nor Atsmon fail to disclose the frequency ranges recited in some of the dependent claims. The claims rejected on this basis are accordingly allowable over the cited references.

The above comments illustrate that (1) the Office action conflates different signal detection technology, and (2) independent claim 1 includes subject matter that is not disclosed in either reference, or the combination thereof. As such, the above comments suffice to demonstrate that the rejection of claim 1 over the proposed combination is improper and should be withdrawn.

Regardless, the rejection is improper because there is no teaching or motivation to combine the references as proposed in the Office action.

As for modifying the Hampton reference to incorporate an “ultrasonic link” as disclosed by Atsmon, the Office action then asserts that such a modification would be obvious “to reduce costs” (Office action, page 4). However, there is no indication in either reference, nor is any suggested in the Office action, that the alternative technology would be any less costly than that disclosed in unmodified configuration. Atsmon only indicates that incorporating specialized signal-detection hardware of *any* nature (i.e., either ultrasonic, IR, RF, and so forth), is “expensive and/or problematic” (Atsmon, paragraph {0004}).

Regardless, Hampton actually *teaches away* from incorporating ultrasonic signal detection or transmission hardware, such as that disclosed in Atsmon. The toy figure of the Hampton reference is configured to receive sound input from a child user via a microphone configured to detect clapping noises (Hampton 17:28–32; 20:18–21). Although the toy figure includes sensors to detect manual manipulation of the toy figure (26:4–37), or to receive IR signals from another such toy figure (17:24–27), there is no teaching, suggestion, or motivation to modify the toy figure to be responsive to, transmit, or even detect sound input that is outside of the sound frequency ranges that clapping noises, or general audible noise ranges, such as the ultrasonic signals disclosed in Atsmon. Also, there is simply no need, given that the technology in the Hampton reference is perfectly capable of receiving the types of input that it is intended to.

Moreover, not only is there no indication that Hampton is even capable of detecting sound in a frequency range that includes frequencies of normal human speech and also rejecting some of those frequencies (i.e., those in an upper range of normal human speech), as recited in claim 1, but Hampton *teaches away* from incorporating any such technology. A significant

portion of the Hampton reference discloses that the toy interacts with a child, and more particularly via inputs received from a child. Although clapping noises are the only sound signals that the Hampton toy is disclosed to detect, even if it would be obvious to modify Hampton to also detect sound signals in a frequency range that includes normal human speech, it would not be obvious to *further* modify the reference to *reject* frequencies in an upper range of normal human speech, as recited in claim 1. For example, such rejected frequencies may overlap with frequencies corresponding to clapping noises, which would be directly contrary to the disclosure of Hampton. As another example, children's voices usually register in higher frequencies than adult voices; thus, it would not be obvious to modify a toy that is designed to be responsive to input from a child to detect voice frequencies but reject an upper range of such voice frequencies.

As such, even if the proposed combination of Hampton with Atsmon disclosed each and every element of claim 1, the combination is an improper one to make. Even if proper, however, the remarks above demonstrate that the combination fails to disclose all of the subject matter of independent claim 1. For at least the aforementioned reasons, the rejection of claim 1 is improper and should be withdrawn. Accordingly, claims 5-11, which depend from claim 1, should also be allowed for at least the same reasons.

Independent Claim 12 and Dependent Claims 15-19

Independent claim 12 is amended herein to incorporate subject matter originally recited in dependent claims 13-14, which are canceled without prejudice. Amended claim 12 recites, in part, a sound detector adapted to (1) detect sound in at least two different frequency ranges, one of which is above normal human speech and the other of which includes frequencies of normal

human speech, and to (2) reject frequencies in third frequency range that also includes frequencies of normal human speech and that is between the first and second ranges. Amended claim 12 also recites, in part, an output apparatus adapted to produce a corresponding sensible action when sound is determined to be in either of first and second frequency ranges.

The Office action asserts that Hampton discloses a detector adapted to detect signals in first and second ranges and exclude those in a third range between the first and second, by asserting that “frequencies between IR and highest frequency sensed by microphone are ignored” (Office action, page 6). The Office action also asserts, as above, that Atsmon discloses that ultrasonic links may be used instead of IR links, and that it would be obvious to use the link or Atsmon in the system of Hampton, “thereby reducing costs” (*Id.*).

To the extent that the remarks above with regard to the rejection of claim 1 are also germane to the rejection of claim 12, they are reiterated herein. For example, Atsmon does not disclose the interchangeability of detection technologies, nor does either reference provide support for the proposition that one type of signal detection is less costly than another. Neither reference discloses the use of “two distinct frequency ranges to create two communication channels and that sound signals may be used for both” as asserted in the Office action without citation or support (*Id.*). Also, there is no motivation to combine the references; indeed, as detailed above, Hampton teaches away from making the proposed combination.

With respect to the subject matter of claim 12, Hampton does not disclose a sound detector adapted to detect sound in two separate frequency ranges and reject those in a third therebetween. The Office action correctly identifies that Hampton uses an IR sensor, to detect IR signals, and a microphone, which is explained to detect clapping noises. These are two separate sensors, only one of which (the microphone) is adapted to detect sound (and thus can be

considered a “sound detector”), and the sound that the microphone is adapted to detect is limited to clapping noises. Because Atsmon provides no support for the proposition that ultrasonic links may be used instead of IR links, or even that the use of one technology is preferable to another, no combination or Hampton and Atsmon discloses a sound detector as recited in claim 12.

Also, neither Hampton nor Atsmon, nor any combination thereof, discloses an output apparatus to produce a first sensible action when sound is detected in either of the first and second frequency ranges. Because neither reference discloses or even suggests a sound detector adapted to detect sounds in two separate frequency ranges, there is no disclosure or suggestion of an output apparatus producing a sensible action when sound is detected in either range.

With respect to dependent claims 15–19, these claims recite additional subject matter, such as, for example, specific frequency ranges. As indicated above, the Office action is silent with regard to these frequency ranges. However, neither Hampton nor Atsmon fail to disclose the frequency ranges recited in some of the dependent claims. The claims rejected on this basis are accordingly allowable over the cited references.

As such, for at least the aforementioned additional reasons, even if the proposed combination of Hampton with Atsmon disclosed each and every element of claim 12, the combination is an improper one to make. Even if proper, however, the remarks above demonstrate that the combination fails to disclose all of the subject matter of independent claim 12. For at least the aforementioned reasons, the rejection of claim 12 is improper and should be withdrawn. Accordingly, claims 15–19, which depend from claim 12, should also be allowed for at least the same reasons.

Independent Claim 20

Independent claim 20 is amended herein for clarity, and recites, in part, a sound receiver adapted to receive sounds in a specific frequency range, and at least two sound analyzers adapted to produce signals when sounds in two frequency ranges, respectively, within the specific frequency range, are received.

Similar to the rejections of independent claims 1 and 12, the Office action misconstrues the technology in Hampton, which includes an IR signal detector and a microphone to detect clapping noises, as the subject matter in independent claim 20, asserting that the ultrasonic links in Atsmon may be used instead of the IR links in Hampton (Office action, page 8).

To the extent that the remarks above with regard to the rejection of claims 1 and 12 are also germane to the rejection of claim 20, they are reiterated herein. For example, Atsmon does not disclose the interchangeability of detection technologies, nor does either reference provide support for the proposition that one type of signal detection is less costly than another. Also, there is no motivation to combine the references; indeed, Hampton teaches away from making the proposed combination.

More specifically, with respect to the subject matter of claim 20, the Office action correctly acknowledges that Hampton “does not ... disclose the frequency ranges as claimed.” However, neither does Atsmon, nor does the Office action so assert.

As such, for at least the aforementioned additional reasons, even if the proposed combination of Hampton with Atsmon disclosed each and every element of claim 20, the combination is an improper one to make. Even if proper, however, the remarks above demonstrate that the combination fails to disclose all of the subject matter of independent claim

20. For at least the aforementioned reasons, the rejection of claim 20 is improper and should be withdrawn.

"Claims 21-40"

Claims 21–40 are rejected in the Office action via the phrase "in an analogous manner to the apparatus claims 1–20." However, this is an incomplete rejection, for at least the reason that claims 21–40 recite different subject matter (i.e., methods, rather than apparatus), and for at least the additional reason that the Office action fails to indicate how the references are being used to reject the claims.

"Claims 21–40" include independent claims 21, 32, and 40. Independent claim 21 is amended to incorporate subject matter originally recited in claims 22–24, which are canceled without prejudice herein. Independent claim 32 is amended to incorporate subject matter originally recited in claims 33–34, which are also canceled without prejudice herein. Independent claim 40 is recited for clarity.

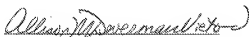
To the extent that the remarks above with respect to independent claims 1, 12, and 20 are germane to the rejections of "claims 21–40," they are reiterated with respect to independent claims 21, 32, and 40, and their dependent claims, respectively. However, because the rejections of these claims is incomplete, if the Examiner declines to withdraw the rejections, Applicants request that a subsequent Office action be issued that explains in adequate detail where all of the subject matter in each of the pending claims can be found in the cited reference and/or how the cited references are being used to reject the pending claims.

Conclusion

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

CERTIFICATE OF E-FILING

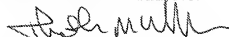
I hereby certify that this correspondence is being transmitted electronically via the United States Patent and Trademark Office's EFS-Web System on June 9, 2008.



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